

**PREVENTION OF SIGNIFICANT DETERIORATION PERMIT  
ISSUED PURSUANT TO THE  
REQUIREMENTS AT 40 CFR § 52.21**

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9**

**PSD PERMIT NUMBER:** AZ 08-01

**PERMITTEE:** Salt River Project Agricultural and Power District  
Mail Station PAB352  
P.O. Box 52025  
Phoenix, AZ 85072

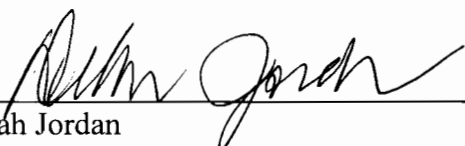
**FACILITY NAME:** Navajo Generating Station

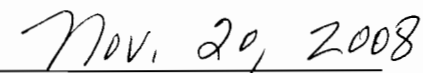
**FACILITY LOCATION:** On the Navajo Nation Indian Reservation,  
approximately five miles east of Page off U.S.  
Highway 98, in Coconino County, Arizona.

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part C (42 U.S.C. Section 7470, *et. seq.*), and the Code of Federal Regulations (CFR) Title 40, Section 52.21, the United States Environmental Protection Agency Region 9 (EPA) is issuing a *Prevention of Significant Deterioration* (PSD) air quality permit to the Salt River Project Agricultural and Power District (SRP). The PSD Permit applies to the installation of Low-NO<sub>x</sub> Burners (LNBs) and Separated Over-fire Air (SOFA) systems on three existing coal-fired steam generating units at the Navajo Generating Station (NGS).

SRP is authorized to construct and operate the LNBs and SOFA systems at the NGS as described herein, in accordance with the permit application (and plans submitted with the permit application), the federal PSD regulations at 40 CFR § 52.21, and other terms and conditions set forth in this PSD Permit. Failure to comply with any condition or term set forth in this PSD Permit is subject to enforcement action pursuant to Section 113 of the Clean Air Act. This permit does not relieve NGS from the obligation to comply with applicable federal, state, and Navajo Nation Environmental Protection Agency air pollution control rules and regulations.

This PSD Permit becomes effective on the date of issuance pursuant to 40 CFR § 124.15(b)(3).

  
\_\_\_\_\_  
Deborah Jordan  
Director, Air Division

  
\_\_\_\_\_  
Date

**NAVAJO GENERATING STATION – LOW-NO<sub>x</sub> BURNER PROJECT (AZ 08-01)**  
**PREVENTION OF SIGNIFICANT DETERIORATION PERMIT**  
**PROPOSED PERMIT CONDITIONS**

**PROJECT DESCRIPTION**

The Navajo Generating Station (NGS) has a combined power generating capacity of 2,250 net megawatts and consists of three existing coal-fired steam generating units (Boiler Units 1, 2, and 3), associated air pollution control devices, and auxiliary equipment. The facility was constructed in 1970 and is located on the Navajo Nation Indian Reservation approximately five miles east of Page, Arizona. Units 1, 2, and 3 are operated by the Salt River Project Agricultural and Power District (SRP) and co-owned by the following six entities: U.S. Bureau of Reclamation, SRP, Los Angeles Department of Water and Power, Arizona Public Service Company, Nevada Power, and Tucson Electric Power Company. The Permittee receives coal with a maximum sulfur content of 1.5% by weight from the Peabody Western Coal Company's Kayenta Mine.

SRP has decided to implement voluntary emission reduction projects at the NGS by retrofitting all three boilers with Low-NO<sub>x</sub> Burners (LNBs) and separated over-fire air (SOFA) systems. One boiler will be retrofitted during each of the next three calendar years. SRP will commence operation in March 2009, provided this permit is finalized in 2008. The installation of all three new burners will reduce total nitrogen oxide (NO<sub>x</sub>) emissions by 22,386 tons per year (tpy) although carbon monoxide (CO) emissions will increase by 36,570 tpy.

Because of the increases in CO emissions, the facility is subject to the Prevention of Significant Deterioration (PSD) Program.

**EQUIPMENT DESCRIPTION**

Unit ID / Stack ID	Unit Description	Maximum Capacity	Existing Controls	New Controls
Boiler 1 U1/Stack S1	One (1) pulverized coal-fired boiler, using No. 2 fuel oil for ignition fuel. Stack S1 is equipped with SO <sub>2</sub> , CO, and NO <sub>x</sub> CEMS, and a COMS.	7,725 MMBtu/hr; 750 Net MW	FGD system, SCBR1 (1999); ESP1	LNB/SOFA system
Boiler 2 U2/Stack S2	One (1) pulverized coal-fired boiler, using No. 2 fuel oil for ignition fuel. Stack S1 is equipped with SO <sub>2</sub> , CO, and NO <sub>x</sub> CEMS, and a COMS.	7,725 MMBtu/hr; 750 Net MW	FGD system, SCBR2 (1998); ESP2	LNB/SOFA system
Boiler 3 U3/Stack S3	One (1) pulverized coal-fired boiler, using No. 2 fuel oil for ignition fuel. Stack S1 is equipped with SO <sub>2</sub> , CO, and NO <sub>x</sub> CEMS, and a COMS.	7,725 MMBtu/hr; 750 Net MW	FGD system, SCBR3 (1997); ESP3	LNB/SOFA system

## **PERMIT CONDITIONS**

### **I. PERMIT EXPIRATION**

As provided in 40 CFR 52.21(r), this PSD Permit shall become invalid if construction:

- A. is not commenced (as defined in 40 CFR 52.21(b)(9)) within 18 months after the approval takes effect; or
- B. is discontinued for a period of 18 months or more; or
- C. is not completed within a reasonable time.

### **II. PERMIT NOTIFICATION REQUIREMENTS**

Permittee shall notify EPA Region 9 in writing or by electronic mail of the:

- A. date construction is commenced, postmarked within 30 days of such date.
- B. actual date of initial startup, as defined in 40 CFR 60.2, postmarked within 15 days of such date.
- C. date upon which initial performance tests will commence, in accordance with the provision of Section IX.F, postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the performance test protocol required pursuant to Section IX.F.
- D. date upon which initial performance evaluation of the CEMS will commence in accordance with 40 CFR 60.13(c), postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the CEMS performance test protocol required pursuant to Condition IX.E.5.

### **III. FACILITY OPERATION**

At all times, including periods of startup, shutdown and malfunction, Permittee shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA which may include, but is not limited to, monitoring results, opacity observations, review of operating maintenance procedures and inspection of the source.

#### **IV. MALFUNCTION REPORTING**

- A. Permittee shall notify EPA by facsimile or electronic mail at R9.AEO@epa.gov within two (2) working days following the discovery of any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner, which results in an increase in emissions above the allowable emission limit stated in Condition IX.B of this permit.
- B. In addition, Permittee shall notify EPA in writing or electronic mail within fifteen (15) days of any such failure described under Condition IV.A. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Condition IX.B, and the methods utilized to mitigate emissions and restore normal operations.
- C. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or any law or regulation such malfunction may cause.

#### **V. RIGHT OF ENTRY**

The EPA Regional Administrator, and/or an authorized representative, upon the presentation of credentials, shall be permitted:

- A. to enter the premises where the source is located or where any records are required to be kept under the terms and conditions of this PSD Permit; and
- B. during normal business hours, to have access to and to copy any records required to be kept under the terms and conditions of this PSD Permit; and
- C. to inspect any equipment, operation, or method subject to requirements in this PSD Permit; and
- D. to sample materials and emissions from the source(s).

#### **VI. TRANSFER OF OWNERSHIP**

In the event of any changes in control or ownership of the facilities to be constructed, this PSD Permit shall be binding on all subsequent owners and operators. Permittee shall notify the succeeding owner and operator of the existence of this PSD Permit and its conditions by letter, a copy of which shall be forwarded to EPA Region 9 at the address shown in Section X.

## **VII. SEVERABILITY**

The provisions of this PSD Permit are severable, and, if any provision of the PSD Permit is held invalid, the remainder of this PSD Permit shall not be affected.

## **VIII. OTHER APPLICABLE REGULATIONS**

Permittee shall construct and operate this project in compliance with this PSD Permit, the application on which this Permit is based, and all other applicable federal, state, and local air quality regulations. This PSD Permit does not release the Permittee from any liability for compliance with other applicable federal, state and local environmental laws and regulations, including the Clean Air Act.

## **IX. SPECIAL CONDITIONS**

### **Low-NO<sub>x</sub> Burner (LNB) & Separated Over-fire Air (SOFA) Requirements**

- A. Prior to commencement of installation, the Permittee shall submit the following information to EPA:
  - 1. Design specifications of the LNB/SOFA system to be installed.
  - 2. At least one month prior to the date of initial start-up, an LNB/SOFA system operating plan which sets forth measures that will be taken to maintain and operate the system in a manner to ensure compliance with the emission limits specified in Condition IX.B.
- B. Emission Limits
  - 1. Carbon monoxide (CO) emissions from each unit shall not exceed 0.42 lb/MMBtu based on a 30-day rolling average.
  - 2. Nitrogen oxide emissions (NO<sub>x</sub>) from each unit shall not exceed 0.24 lb/MMBtu based on a 30-day rolling average.
- C. Demonstration Period Requirements
  - 1. Demonstration Period is defined as the first 18 months of operation after installation of the LNB/SOFA system.
  - 2. After the Demonstration Period for each LNB/SOFA system, the Permittee shall submit to EPA a written report together with CO CEMS data showing actual CO emissions which evaluates whether a lower CO emissions limit can be consistently and reasonably achieved while maintaining NO<sub>x</sub> emission levels at or below 0.24 lb/MMBtu on a 30-day rolling average. The

report shall provide all supporting documentation identifying the combustion characteristics that impact CO emissions and evaluate the potential for reducing the CO emission limit to a level that can be consistently and reasonably met. Within 30 days after the EPA concludes in writing that the report is acceptable, the Permittee shall apply for a permit modification to decrease the CO emission limit. This report shall also evaluate the ten highest occurrences for a one-hour average and an 8-hour average for pounds per hour CO. If these averages are inconsistent (higher) with the modeling submittal, either a new modeling analysis will be required to assure maintenance of the CO NAAQS or a short term limit will be established for the permit.

- D. At all times, including periods of startup and shutdown, the Permittee shall, to the extent practicable, maintain and operate the LNB/SOFA system in a manner consistent with good combustion practices to minimize emissions.
- E. Continuous Emission Monitoring Systems
  - 1. Within 60 days of completion of installation of each LNB/SOFA system, the Permittee shall install, and thereafter operate, maintain, certify, and quality-assure a continuous emission monitoring system (CEMS) for each boiler which measures stack gas CO concentrations in lb/MMbtu.
  - 2. The CO CEMS shall meet the applicable requirements of 40 CFR Part 60 Appendix B, Performance Specifications 3 and 4A, and 40 CFR Part 60 Appendix F, Procedure 1. The diluent monitor (O<sub>2</sub> or CO<sub>2</sub>) must meet the requirements of 40 CFR Part 75.
  - 3. Permittee shall operate, maintain, and quality-assure according to the requirements of 40 CFR Part 75, a CEMS for each boiler which measures stack gas NO<sub>x</sub> concentrations in lb/MMbtu. The NO<sub>x</sub> CEMs must meet the requirements of 40 CFR Part 75.
  - 4. The CO CEMS shall complete a minimum of one cycle of operations (sampling, analyzing and data recording) for each successive 15-minute period.
  - 5. Permittee shall submit a CO CEMS performance test protocol to the EPA no later than 30 days prior to the test date to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.
  - 6. Permittee shall furnish the EPA a written report of the results of performance tests within 60 days of completion.
  - 7. The CO CEMS shall be tested annually and quarterly in accordance with the requirements of 40 CFR 60 Appendix F, Procedure 1. The NO<sub>x</sub> CEMS shall meet the quality assurance requirement found in 40 CFR Part 75.

F. Performance Test

A thirty day initial performance test for CO and NO<sub>x</sub> shall be conducted with the CEMS starting the day after successful completion of the performance testing for the CO CEMS. A report of the NO<sub>x</sub> and CO hourly emissions during this initial test shall be submitted to EPA within 30 days of completion of the test.

G. Recordkeeping and Reporting Requirements

1. Permittee shall maintain records of the hours of operation for U1, U2 and U3 on a monthly basis.
2. Permittee shall maintain records of the amount of fuel used in U1, U2 and U3 on a monthly basis.
3. Permittee shall maintain all records on site of actual operating data and emissions calculations for emissions limits required in Condition IX.B.
4. Permittee shall maintain CEMS records that contain the following: the occurrence and duration of any startup, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance, duration of any periods during which a continuous monitoring system or monitoring device is inoperative, and emission measurements.
5. Permittee shall maintain records and submit a written report of all excess emissions to EPA semi-annually. The report is due on the 30<sup>th</sup> day following the end of the calendar quarter and shall include the following:
  - a. Time intervals, data and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;
  - b. Applicable time and date of each period during which the CEMS was inoperative (monitor down time), except for zero and span checks, and the nature of system repairs or adjustments; and
  - c. A negative declaration when no excess emissions occurred or when the CEMS has not been inoperative, repaired, or adjusted.
6. Excess emissions shall be defined as any operating day in which the 30-day rolling average CO and NO<sub>x</sub> concentration, as measured by the CEMS, exceeds the maximum emission limits set forth in Condition IX.B.
7. A period of monitor down time shall be any unit operating hour in which sufficient data are not obtained to validate the hour for CO, NO<sub>x</sub>, or O<sub>2</sub>.

8. Excess emissions indicated by the CEMS shall be considered violations of the applicable emission limit for the purpose of this permit.
9. All records required by this PSD Permit shall be retained for five years following the date of such measurements, maintenance, and reports.

## **X. AGENCY NOTIFICATIONS**

All correspondence as required by this permit must be forwarded to:

1) Director, Air Division (Attn: AIR-3)  
EPA Region 9  
75 Hawthorne Street  
San Francisco, CA 94105-3901  
e-mail: R9AirPermits@epa.gov  
facsimile: (415) 947-3579

2) Environmental Department Director  
Navajo Nation EPA  
P.O. Box 9000  
Window Rock, AZ 86515